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To the Graduate Council:

I am submitting herewith a thesis written by Jacob Stafford Thomas entitled "Architectural Sampling: the Integration and Manipulation of Meaning." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Architecture, with a major in Architecture.

Scott Wall, Major Professor

We have read this thesis and recommend its acceptance:

Brian Ambroziak, Barbara Klinkhammer

Accepted for the Council: Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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Architectural Sampling: the Integration and Manipulation of Meaning

A Thesis Presented for The Master of Architecture Degree The University of Tennessee, Knoxville

Jacob Uchqtf 'Thomas December 2009 Copyright © 2008 by JacobThomas All rights reserved.

<u>Abstract</u>

This thesis is an investigation into the appropriation and assimilation of meaning by examining the relationship between the technique and meaning of the musical sample and meaning and memory in architecture. As a previously recorded sound integrated into a new work, the sample has a dual identity as both detail and artifact. It is a detail of two or more wholes: an original condition and the new condition, and an artifact from the context of the work from which it was taken. In architectural design, each recognizable form and spatial arrangement is a sample from a prototype with its own context and history. Each time a known form or spatial arrangement is sampled meaning is communicated from the prototype to the new work. The decontextualization of the sample, its manipulation and recontextualization into a new work provides the architect a means for reinterpretation and reinvention. Through an exploration of the use of the sample in music, art and architecture this thesis shows how sampling can alter the meaning of the physical environment.

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I. Introduction



(Fig. 0) "Triple-Self Portrait" by Norman Rockwell.

"Imitation, then is one instinct of our nature. Next, there is the instinct for 'harmony' and rhythm, meters being manifestly sections of rhythm. Persons, therefore, starting with this natural gift developed by degrees their special aptitudes, till their rude improvisations gave birth to poetry"

-Aristotle (Poetics)

"Sampling allows producers to take musical performances from a variety of recorded contexts and organize them into a new relationship with each other. It is this relationship that represents the producers' art, and it is this relationship that reveals the producers' aesthetic goals."

-Schloss (Making Beats)

To understand the potential of the process of sampling, it is critical that one understand how that process communicates meaning. The process of sampling has 3 steps: 1. taking a sample from an existing source 2. manipulating the extracted sample 3. incorporating the manipulated sound into a new original work. To understand sampling as a process is to understand it in its entirety:

"A...beat consists of a number of real-time collective performances (original recordings), which are digitally sampled and arranged into a cyclic structure (the beat) by a single author (the producer). In order to appreciate the music, a listener must hear both the original interactions and how they have been organized into new relationships with each other." (Perkins , 159)

The aesthetic quality of the sample is dependent not only upon the quality of the resulting work or how well it is integrated, but also the original material sampled and the quality of its manipulation. Thus, one must understand sampling as a process and not simply as a result. The process is one of balance. For example, a great horn break taken from a classic soul album that is unaltered and placed into a new work is not considered successful because it is essentially "stolen". However, an accordion sample from an overlooked album that is cleverly manipulated into a new song is considered a success

because of the skill in which the producer takes something with little accepted value and makes it enjoyable. This balance can be best seen in the sampling of James Brown's "Funky Drummer". Regarded as the most sampled song in recorded history, the drum breaks performed by Clyde Stubblefield have been sampled and incorporated into over 100 new songs. If the quality of the process of sampling were simply dependent upon the quality of the source material, then each of the 100+ songs would be equally good or bad. However, because of the variation in the break sampled, its manipulation and integration, the songs vary in quality. As a communicator of meaning the sample must be understood as a fragment. The post-manipulated, pre-integrated sample has characteristics of both the original work from which it was taken and the new work into which it will be inserted. Thus, the sample communicates meaning through its connection to both the original (appropriation) and the new (assimilation). Both the process of sampling and its communication of meaning provide a framework from which to begin to understand how sampling can alter meaning in music and art.

II. Music

Slum Village - "I Don't Know" *Fantastic Vol. II.* (2000) Feat. Jay Dee, T3 and Baatin. Sampling James Brown.

[James Brown] Bobby? I don't know.

[All]

Yo, I don't know why the fuck I'm fuckin' wit you. (I don't know.) Yo, I don't know why the fuck I'm fuckin' wit you. (I don't know.) See, I don't know why the fuck I'm fuckin' wit you. (I don't know.) See, I don't know why the fuck I'm fuckin' wit you. (I don't know.) You, you, you.

[Jay Dee] Could ask my man, T(3). I ain't the (one) To be, played like them niggas that you use to play for money and No time for acting (funky) with me. You best believe that you won't (do it).

[T3]

I'm influenced to like uh, (you know) And then I pick up the phone shit, (I don't know). She walks by casual says my loot is usual. Baatin says it's him (too).

[Baatin] How many ladies on your jock? I mean your whole crew is like (yeah) You know the S is my crew we rule, (what man you know) We got a whole flock of niggas with glocks, (you know) But I don't know why I'm fuckin' with you. (I don't know.)

[All]

Yo, I don't know why the fuck I'm fuckin' wit you. (I don't know.) Yo, I don't know why the fuck I'm fuckin' wit you. (I don't know.) See, I don't know why the fuck I'm fuckin' wit you. (I don't know.) See, I don't know why the fuck I'm fuckin' wit you.

(Fig. 1) Lyrics to "I Don't Know" by Slum Village



(Fig. 2) Origin of James Brown Samples

The song "I Don't Know" from the album Fantastic Vol. II by Slum Village is composed of original lyrics (Fig. 1 & 2) with samples from James Brown and The JB's funk songs from 1970-1974. The producer, Jay Dee samples James Brown's dialogue with his band before the songs begin, isolating single words and integrating them into new Slum Village lyrics. Traditionally, samples are incorporated into new songs as a layer in the "beat" (musical accompaniment) or as the "hook" (chorus), however in the Slum Village song the James Brown samples are composed so that they are not relegated to the background (hierarchical), but rather in direct conversation (ahierarchical) with the members of the group. (Fig. 2) The blatant vulgarity, minimal manipulation of the sampled material and brevity of the new song each acknowledge the lightheartedness in its intent. The strength in this example lies not in the manipulation of the sampled material, but in the transparency of its decontextualization and recontextualization. Each word taken is a detail from several wholes (word \rightarrow line \rightarrow verse) (Fig. 3, Fig. 4, & Fig. 5) and integrated into a mirrored structure (new word \rightarrow new line \rightarrow new verse) in the new song. While the detail (the sampled word) remains the same, its meaning is altered by its association with the new lyrics, and begins to structure the new work through its rhythmic integration.



(Fig. 3) James Brown samples in new context.



(Fig. 4) Banksy. "British rat" London, UK



(Fig. 5) Banksy. London, UK

III. Image

London-born artist Banksy uses stencils, spray paint and image sampling in his street art. Image sampling is the use and manipulation of a known image with a commonly held association. By manipulating the image that association can be altered. In many of his works Banksy samples the images of gas masks, smiley faces, the Royal Family and British policemen to comment upon British customs and culture. In his "rat" series Banksy samples the image of a rat, generally viewed as a pest in dense cities, as a metaphor for the residents of London.

The anthropomorphized rats are a commentary on the consumer-oriented, capitalistic society and are painted 1:1 (rat) scale throughout the city. In the artist's words, "In London you're never more than 20 feet away from somebody telling you you're never more than 20 feet away from a rat". Although rats are common in many urban areas, in London it is apparent to everyone that there is a rat problem, which makes Banksy's image sample all the more potent. His images question whether the rat or the human citizens of the city are the real pests, and the more images he constructs the more the pestilence will become apparent.

Another of Banksy's series takes place on the Separation Wall between Palestine and Israel. In this series he samples a number of images, primarily of hope: flight, children playing and those that manipulate the surface of the wall itself. Through the sampling of these images Banksy manipulates not only the perceived surface of the wall, but in the process the idea of the wall (Fig. 6). The wall stands as a divider between two nations in a religious war, and the images attempt to undermine the understanding of wall

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as "separator". Each of Banksy's works are site specific and are illustrative of the power of the sample to alter its new context. Through the power of the image, he is able to modify not only the images he samples, but to a great extent the surrounding environment.



(Fig. 6) Banksy. Separation Wall. Palestine/Israel.

IV. Sculpture

Sampling in art can be seen early in the 20th century in the "readymades" of Marcel Duchamp. Art pieces such as "Fountain" (Fig. 7) and "L.H.O.O.Q." (Fig. 8) both deal with an original object, its manipulation and integration into a new context. "Fountain" is composed of a single found object, a urinal. In its original context the urinal was a detail in the whole of a bathroom. It was manipulated by turning it on its side and signed as Duchamp's pseudonym R. Mutt. Then it was integrated into a new whole, a collection of artwork in a museum. In "L.H.O.O.Q.", Duchamp samples the form of the Mona Lisa by Leonardo DaVinci on a cheap postcard, a commentary on both the value of art and the art-object. Duchamp manipulates the painting by drawing a moustache and goatee with a pencil and writing the letters l.h.o.o.q. on the bottom. In French, l.h.o.o.q. translates phonetically as "she is hot in the ass". In English Duchamp is asking us to "look", turning the harmless but knowing smile of the Mona Lisa into something much more questionable. Each is a wry commentary on creating, exhibiting and viewing art as well as an example of how sampling can greatly alter the meaning of an object. Through creative manipulation of a urinal, Duchamp elevates a bathroom detail to the level of high art while the manipulation of the Mona Lisa in "L.H.O.O.Q." turns one of the most famous pieces of art in the world into a dirty joke.



(Fig. 7) "Fountain" Marcel Duchamp (1917)



(Fig. 8) "L.H.O.O.Q." Marcel Duchamp (1919)

Andy Goldsworthy is an environmental artist working primarily from his hometown of Penpont, Scotland. In his work Goldsworthy addresses "natural typologies" as a way to illuminate the large-scale hidden processes of nature. In his "stone seed" series Goldsworthy samples the natural typologies "stone" and "seed" (Fig. 9) as a commentary on the life-cycle and eventual fertility of what we now understand as stone: "I think to look at stone and see growth through the form of the seed is a very powerful image for me". By manipulating the samples stone and seed Goldsworthy creates sculpture that is neither, deriving meaning from both association with stone and assimilation from seed.



(Fig. 9) Seed form constructed from found stone. Still from "Rivers and Tides."

In another series of his he samples the typologies "boulder" and "wool" and subordinates both typologies by creating a sculpture whose form and context convey the solid characteristics of a boulder and visual and tactile texture assimilate it to the soft qualities of sheep's wool (Fig. 10). In a natural context where both readings are plausible, Goldsworthy alters the meaning of both the appropriated and the assimilated, creating a sculpture that is at the same time neither and both.

In another work Goldsworthy was commissioned to create a fieldstone wall in upstate New York. Goldsworthy's wall, like Robert Frost's (App. D) is a play on the wall as superficial separator, and chooses inclusivity rather than exclusivity. The wall subordinates the typology of wall by letting the landscape shape it. Goldsworthy's wall is divided into two primary sections, the first part, from the highway to the forest is a typical wall separating the flat open field from the driveway. The second section of the wall runs through the forest, undulating in response to trees and topography and finally dipping into a pond (Fig. 11 & Fig. 12).



(Fig. 10) Rock covered with sheep's wool.



(Fig. 11) Wall responding to field. Still from "Rivers and Tides"



(Fig. 12) Same wall responding to topography, trees and water.

V. Typology

The sampling of architectural form has a long history. Central to architecture is the idea of the "type", a designation that denotes a building form based on program that has been previously used. In Le Corbusier's La Tourette, one can see how the type monastery was modified according to the architect's understanding of the project and its context. While types are an example of sampling, the subject of building typologies has been written on extensively. This paper attempts to address sampling as a means to integrate and manipulate meaning at a smaller scale. In the Doma Gallery by W Architects typological sampling is the designs one big move, and is such a pure example of typological sampling that it makes it worthy of mention.



(Fig. 13) Barn interior.

(Fig. 14) Glass House by Philip Johnson

The Doma Gallery is sited on a farm turned private residence in Baltimore,

Maryland in which an existing barn was renovated into a museum. The two typological forms used in this project were the rural barn and the modernist glass box. (Fig. 13 & 14) The project as a whole addresses the idea of storage by using two building types that deal with storage in very different ways. The barn is highly functional, open to the elements and the glass box is a type-form thermally closed and visually open to the environment. The strength of the project lies in the contrasting materials in the two building types, the aged wood of the barn warped and bent creates seams for light, wind and view and the glass and steel creates an area of shelter within the natural environment. (Fig. 15 & 16) The project examines the change in the use of the land (primarily agricultural to primarily residential) using type-forms that address storage in effect connecting these two contexts through time. Sampling Philip Johnson's Glass House, the design is a play on the modernist notion of transparency, and addresses the barn not as a building, but as an extension of nature. Thus, existing architecture and landscape are compressed into a tight shell around the museum, in what can be understood as the preservation of the cultural and natural history of the site.



(Fig. 15). - Doma Gallery. Hampstead, Maryland.



(Fig. 16) - Steel and glass integrated into wood.

VI. Looping

Looping emerged from the infancy of the hip-hop movement in the late seventies and as such is the most basic means of sample manipulation. DJ's at parties sampled isolated musical instruments (the "breaks") from disco songs and placed them end-to-end. This created a structure over which they played original music or other samples. The sample, as diversely as it is used today, evolved out of that basic structure. What is considered a detail in the original is looped to create a rhythm that will become the structure of the new work. This new work provides a new context for the detail, and the loop (through its cyclical structure) creates a new harmonic relationship between the end of the loop and the beginning:

"On the most basic level, looping automatically recasts any musical material it touches, insofar as the end of a phrase is repeatedly juxtaposed with its beginning in a way that was not intended by the original musician. After only a few repetitions, this juxtaposition, along with the largely arbitrary musical patterns it creates, begins to take on an air of inevitability. It begins to gather a compositional weight that far exceeds its original significance." (Schloss, 137)

Architecturally, looping can be implemented in several ways. In the buildings of Richard Meier the 1/8" seam and façade detail is looped to create an underlying structure to be understood from a variety of scales- at the human scale the seam creates a rhythm between panels. At the building scale it creates order for the whole. At the largest scale, the looped seam/panel creates continuity between places. In adjacent buildings the seam loop creates an order for the spaces between them. In a song, typically the sample is looped and isolated (from the other instruments) at the beginning. At that moment one is aware of the seam between the end of the sample and its beginning. As one continues to

listen the seam disappears and a new compositional order is established. In music one understands the isolated sample before one sees how it orders the whole. In architecture, the opposite is true. One sees a building from a distance and experiences the whole first. As one moves closer to the building and inhabits it one experiences the detail at a human scale (Fig. 17, Fig. 18, & Fig. 19).

In Meier's Getty Center, in Los Angeles, California the loop is incorporated so that one understands the detail before the whole, increasing the processional experience to the building through the growing scale of the loop. At the largest scale Meier's buildings around the world contain this looped detail, in effect connecting them through space through memory (Fig. 20 & Fig. 21).



(Fig. 17) How looped detail is experienced in a typical song.



(Fig. 18) How looped detail is experienced in a typical building.



(Fig. 19) How looped detail is experienced in Meier's Getty Center.



(Fig. 20) Growing scale of detail becomes generator for order of buildings and spaces



(Fig. 21) Looped detail connecting panel, façade, building, cities. Collage from Meier buildings in Rome, Italy, Los Angeles, California; Harbor Springs, Michigan; Barcelona, Spain

VII. Scratching

Scratching is a form of manipulation in which a sampled record playing on a turntable is manually reversed to a previous point in the sample. The result is the revisitation of a sound already heard along with a fragment of the sound played at a quicker speed in reverse. The scratch is only recognizable as a backward sound when the scratch is done slowly and deliberately, so in most cases it is only recognized as a scratching noise, which often serves to integrate the sample into the rhythm of the new work. The scratch compresses the sample fragment into a much smaller segment of time while elongating the played sample as a whole. In "Clap Your Hands" by A Tribe Called Quest, the sample is both compressed and expanded in the scratching between the samples and elongated when scratched within the sample itself (Fig. 22).



(Fig. 22) Diagram of "scratching". A Tribe Called Quest - "Clap Your Hands.

Architecturally, the compression of the scratch and elongation of the sample can be seen in the linear (city scale) and radial organization (building scale) of St. Peter's Square in Vatican City. The obelisk is a sample of a type of monument, and guide how one moves throughout the city (Fig. 23 & Fig. 24). Each view granted to the obelisk is the playing of that sample and the view impeded is a scratch until one sees it again. In the case of St. Peter's obelisk, one views it from a distance from the Via Della Conciliazione and it guides ones path into the square.

The square itself is organized around a baroque oval, and extends two colonnaded "arms" from St. Peter's Basilica. The square contains three central focal points: the center points of each circle, and an obelisk at the center of the oval marking the burial place of St. Peter (Fig. 25). The columns of the colonnades are arranged radially so that as one moves through it, they experience a compression and expansion like that of the scratched sample. In this way architectural scratching both integrates the sample into its context while providing the inhabitant a variety of spatial conditions (Fig. 26, Fig. 27, & Fig. 28)).



(Fig. 23) Egyptian to Roman Obelisk.



(Fig. 24) Sketch of organization of Rome.



(Fig.25) Extension of St. Peter's Square into the city



(Fig. 26) Procession through St. Peter's Square.


(Fig. 27) Compression (grey) and view (yellow) of obelisk.



(Fig.28) Diagram of compression/view of sample.

In Washington D.C. the same radial model is used; but is implemented at the city scale rather than at a building scale. Washington is organized from a Baroque city plan, and as such contains various centers and radiating boulevards. The National Mall is organized around a central point at which two axes, the Capital Building to the Lincoln Monument and the White House to the Jefferson Monument, meet. At that central point stands the Washington Monument. The Washington monument takes the same sample, the obelisk monument and uses it to define a center in the city. Because of the scale of the monument vs. the scale of the city the monument is visible from a much larger distance than that of St. Peter's. If one were viewing the monument from a random point in the city it would be like hearing a sample played with no manipulation. But viewed from the various monuments and important buildings the sample-obelisk is scratched, through framing and reflection, into the fabric of the city, creating a number of meaningful connections between the sample-center and points in the city. Unlike in St. Peter's one is not moving strictly radially with respect to the monument, but as one moves throughout the mall and its monuments one revisits the experiences of the obelisk through various forms of framing and reflection.

Both of the examples above use the monument as a way to mark points in time. Each is a monument to a man, and as such can symbolize not only his life, but the abstract qualities associated with it. In either case, the monument is scratched into its environment in a way that is both planned and deliberate.

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(Fig. 29) Obelisk- sample scratched into the monuments of the city. St. Peter's Square overlaid on Washington D.C.

Other forms of scratching, however develop slowly as a result of the changes in a place over a long period of time and as such can integrate the sample not only to its current surroundings, but also to a context that does not exist. By looking at the Santa Croce district of Florence, Italy today one can see in its built structure a response to its current context and a reference to a Florence of the past. Originally, the oval shape of a Roman colosseum formed the northeast side of the Santa Croce Piazza. Over time shops were built into the walls of the colosseum, eventually taking over the entire grounds. Rather than expanding over time to form a traditional urban street, the shops that replace the colosseum do not expand beyond its original borders. In Florence today, one can see how the two roads that once led to the colosseum doors, the Via Decocchi and the Borgo Dei Greci, now pass through it to the piazza. What remains of the colosseum is only a shadow of its former self, yet its form speaks volumes not only of the site but the surrounding district as well (Fig. 30). In the now pierced border one can see the centering and re-centering of a district; the evolution of the urban context. Although the colosseum is entirely gone, the sample still retains its border and continues to shape its contemporary environment.



(Fig.30) Santa Croce district of Florence, Italy.

Another example of this type of scratching can be seen in Istanbul, Turkey. In the year 330 CE the Emperor Constantine moved the center of the Roman Empire from Rome to Byzantium (Fig. 31). What is interesting about this shift is not the shift in itself, but how a set of existing samples, all indicators of power, are used in the new context. In order to communicate "New Rome" as a center of power greater than that of Rome, Constantinople overlays a Roman plan on top of the existing city, demolishing nearly every remnant of its Greek past (Fig. 32). Today, one can see the history of the growth of the city after 330 in the various expansions of the Roman city walls, as the samples incorporated into the plan of the city reference the city of Rome rather than Byzantium. In this way this example of scratching stands in stark contrast to the colosseum of Florence. The Roman samples are not manipulated and incorporated into the new context, but rather overlaid; creating a new work whose meaning is appropriated far more than assimilated.



(Fig. 31) Map of Rome 350 CE. The sample.



(Fig. 32) Map of Roman expansion from 330 CE overlaid on modern day Istanbul. Overlay of the sample on new context.

The Arch of Constantine (315 CE) is an interesting point of comparison for the example above, in that it is illustrative of a different sampling process entirely. In the Arch of Constantine, one can see that the triumphal arch is the primary form-type, and is inherently associated with previous arch monuments like the Arch of Hadrian (Fig. 33). Unlike monuments that had come before, Constantine's Arch is a spoliated monument, containing (literal) fragments from powerful Roman civic structures and details (statues, bas relief, etc.) taken from buildings constructed under the reign of Trajan, Hadrian and Marcus Aurelius. Although the process of sampling differs in the previous two examples, the aim of each is the same: the preservation and communication of Roman and Constantinian power. It boils down to what is viewed as internal versus what is viewed as external. The Roman city model (internal) is overlaid on the city of Byzantium (external.) In order to communicate the internal model, the external model is sacrificed and meaning is communicated through appropriation. In the second example, the buildings and monuments of past rulers (external to Constantine's reign) are fragmented to fit Constantine's monument (internal.) In this case, meaning is communicated through assimilation. The Roman examples illustrate how symbols of power from sources both internal and external can be sampled, manipulated and integrated into a new context.



(Fig. 33) Arch of Constantine. Rome, Italy.

VIII. Masking

Masking results from the overlay of two things. Although music allows a degree of simultaneity, it is still possible to create a mask through the use of rhythm and volume. The object with the louder or stronger rhythm becomes the mask, while the other sound, obstructed from the ear, becomes the masked. To mask the sample is a way to integrate it into the new context. For example, if two sounds with a common rhythm are played simultaneously, and the sample is the masked, then one could fade out the more prominent mask as a transition to the sample, all while keeping the same rhythm. The opposite could be done transitioning from sample to new work.



(Fig. 34) Sample serves as transitional mask between the old and the new. Fog House by Adjaye Associates.

In the Fog House by Adjaye Associates, the sampled façade of the old building serves as a transitional mask to the new residence behind it. The common rhythm that makes this transition possible is the window spacing used in the original façade and new structure behind it. Adjaye distinguishes the mask from the masked by painting and framing the sampled façade. By painting the old façade one color, one understands it as an object off which the addition is read. At the same time, the color of the mask (dark grey) and the metal of the new addition are complementary in color. The mask is framed using materials unique to the addition, so one understands it as separate elements compositionally, but identical in material. In this way, he is able to differentiate the sample mask and the new residence while at the same time unifying them, creating a design rooted to its context through the sample (Fig. 34).

The song, "Untitled/Fantastic" by Slum Village contains a mask, a high keyboard note that plays continuously through the entire song, disappearing only to mark important moments such as the transition between verses. It is the highest sound in the song (in terms of octave), and as such marks the sonic high-point for the other elements. Balanced by a bass drum on the low end, each marks a limit (key-high; drums-low) in between which the emcees and lower key movements are suspended. The mask in "Untitled/Fantastic" creates very defined limits that structure the entire work. The Dirty House, by Adjaye Associates can be understood in much the same way. In section the façade mask, the only element salvaged from the existing furniture factory, creates a limit between interior and exterior, masking the sacred from the profane. The suspended space in the song takes the form of a two-story hallway, and provides a transition zone from the street to the studio space and living quarters. This relationship is understood in the

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elevation through the white roof "floating" over the heavy masonry façade. The paint of the façade is commonly used to deter graffiti on street-level mechanical boxes, rooting the façade to the street. The suspended space is articulated in the façade is the 2nd floor balcony, creating a space granting views to and privacy from the street. The mask is used very differently in these two projects even though the context (former manufacturing district/London/renovation into residence) is much the same (Fig. 35, Fig. 36, & Fig. 37).

The Fog House in Clerkenwell is located in a former manufacturing district that, much like those in New York, has been renovated and the property values are high. Because of this the mask is used to create a transition between the old and the new. The Dirty House is sited in a neighborhood that has yet to be revived, and as of now is in need of repair. For this reason, the mask is used to create a strongly defined limit between the interior and exterior. Although, in both cases the sample is integrated into the new context as a mask, the manipulation of each is a careful response to two different conditions (Fig. 38).



(Fig. 35) Dirty House exterior.



(Fig. 36) Dirty House interior.



(Fig. 37) Procession from profane exterior.....through transition space.....into sacred interior.



(Fig. 38) Dirty House. Low, high limits and suspended space in plan, section and elevation.

IX. Layering

Although layering and masking are similar in some respects, layering differs from masking in that it has to do with the overlay with three or more things. The renovation of and addition to Castelvecchio by Carlo Scarpa from 1956-1973 is an example of how layering can be used to integrate two structures built nearly 600 years apart. The original structure was built in the medieval Veronese period and is a typological sample of the castle, a private residence, defensive structure and visual center (Fig. 39). In its addition and conversion to a museum Scarpa was aware of history of the existing structure and sought to integrate the new buildings through the use of layered construction, sculpture and bridges. Through layered construction, Scarpa does not emulate the original type-form castle, but the effects of time on a 600-year-old stone structure. It addresses how time can both build and erode, and he designs and exposes his addition as a layered structure to integrate the new and the old (Fig. 40).



(Fig. 39) Ziggurat. The sample.

(Fig. 40) The result – layered construction.

The layered construction exposes a traditional equestrian statue, cantilevered from the new building into the interstitial space. In ancient art, sculpture was an extension of the wall surface through bas relief. (Fig. 41) In Classical and Renaissance sculpture, the work is placed on a plinth and raised above the level of the viewer (Fig. 42). In 1895 Rodin lowered his "Burghers of Calais" from a plinth to the ground in order to connect the sculpture to the environment and the viewer to the emotion in the work (Fig. 43). Scarpa is aware of each of these steps in the presentation of sculpture and floats the equestrian statue in the space between the buildings as a visual focal point and point of transition (Fig. 44).



(Fig.41) Egyptian Bas Relief.



(Fig.43) Cast copy of "Burghers of Calais", Rodin.



(Fig.42) David, Michaelangelo.



(Fig.44) Castelvecchio

Another way in which Scarpa creates a unity between the two structures is through the use of the bridge, both as metaphor and literal means of connection. The bridge is a connector and unifier, and serves as a transition space between the original castle and the new structures (Fig. 45). Moreover, Scarpa samples the form "bridge", a construction common to castles in the drawbridges that both separate them from and connect them to their context. By separating the structures, Scarpa focuses on the act of "crossing", and makes the inhabitant not only aware of the connection between the two buildings but the space between them as well (Fig. 46).



(Fig. 45) Ponte Scaligero. Verona, Italy.



(Fig 46) Bridge from Scarpa addition.

X. Transition

This thesis was an investigation into the process of sampling and its ability to recast meaning. In terms of program it is an attempt to recast observation as not only a visual relationship between seer and seen, but a combination of complex intellectual, physical and visual relationships. Using recognizable and site specific building forms, this project attempts to create unseen relationships between person and place. The three primary forms chosen were the radar tower, lighthouse and wind turbine.

The procession as one enters into the observatory begins on the board walk where one veers off the existing path and continues on the seawall. As one moves along the seawall the colonnade, shipping containers and perforated panels (board) limit ones visual relationship to the landscape. The spaces also become more confined, allowing for the natural processes of the site to enter. This while creating a more confined space sample the landscape and fade into a far more physical relationship

The first three sections of the design gradually decrease ones visual connection to the landscape, while expanding the physical and the intellectual.

Key:

- 0 Beach walk
- 1 Colonnade
- 2 Ramp
- 3 Grotto
- 4 Radar tower
- 5 Underground walkway
- 6 Camera obscura tower
- 7 Turbine tower

The overall plan is numbered in terms of projected start path. The plan is organized around 3 center points in which the radar tower, camera obscura tower and turbine tower are located. The radar and turbine towers location was chosen based on geometry of existing seawall. The camera obscura tower, located in an industrial zone was placed to create an equilateral triangle, connecting the natural and built landscapes of the site (Fig. 47 & Fig. 48: **0,1,2,3,4,5,6,7**).

A procession from the beach walk to grotto is illustrated in Figure 49 (**0**,**1**,**2**,**3**). Colonnade scratches natural landscape, diminishing visual connection while the space becomes gradually smaller, increasing the physical connection to landscape.

Figure 50 and 51, show the ramp leading from colonnade to grotto, where the views are restricted to 42.5" x 60" windows (**1,2,3**). The postcard proportioned windows within the shipping containers sample the standardization of observation by placing the inhabitant in physical space and giving them only a sample of the landscape that which they could obtain in any corner store or gift shop.

The ramp, Figure 52, illustrates the cross section showing scratching of landscape from colonnade and ramp (1,2). Colonnade scratches both built (turbine tower) and natural landscapes (beach/ocean).

The Grotto samples both natural and urban landscapes in order to create a new relationship between them. Perforated panels of metal seawall "micro-sample" the visual natural landscape while exposing the inhabitant to the sound and force of the tides. In the same space television screens sample urban landscape, creating an unexpected visual connection to the city (Fig. 53: **3**).

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rivermerseyobservatory























roof plan at one-fiftieth







plan at 4' above industrial docks



(Fig. 49): Waterfront Diagram











Sampling an existing tower (in the same location) the existing radar tower is inverted into the below grade so that its inhabitation is inverted. Previously the building was occupied by a select few in a tower offering panoramic views of the landscape. Now the building is inhabited below grade by the public who observe the urban landscape (through the television screens) and the sounds and smells of the industrial docks. The television screens are arranged radially, sampling the path of the electromagnetic frequencies that once occurred there. Instead of viewing static objects in the landscape through an abstracted radar screen, observation is gained through a visually direct, yet physically removed means. Moreover, in a traditional observation tower, its center is inhabited almost immediately as its circulation is the central spine of the building. This tower samples that type in that the new center is uninhabitable, increasing the disconnect between the viewed and inhabited landscapes (Fig. 54: **4**).

The underground passageway provides a transition from the radar tower to the camera obscura tower by sampling both the urban and industrial landscapes. Television screens sampling the urban landscape are placed below skylights and a high north wall that capture the sounds of the industrial and natural landscapes. The inhabited landscape is characterized by the inhabitant's steps and the steps of those on the track above adding a separate but distinct rhythm to the procession (Fig. 55 & Fig. 56: **3,4,5,6**).

The camera obscura tower is located on the highest elevation on the site and provides an interactive experience with the urban landscape. The "fissure" in the ceiling of the underground walkway continues in the façade of the camera obscura tower and when one is climbing the stairs this is the only fenestration that can be seen. As one revolves around the center the fissure provides a quick glimpse of the landscape. Upon

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reaching the top of the tower, a revolving mirror and screen capture the urban landscape from a distance through a pinhole in the façade. The tower samples the building type lighthouse, rather than light shining out, light is captured. The landscape, traveling through the pinhole and onto the screen is then captured on postcard sized pieces of photographic paper and developed. In this way the inhabitant samples a fragment of the landscape. Over the course of a month, the tower revolves three hundred and sixty degrees, taking in views over the entire city (Fig. 57 & Fig. 58: **6**).

The beach tower is located on Crosby beach and is designed to harness the various strata of the natural landscape. Constructed of concrete, steel and plexiglass the tower is designed to withstand the forces of nature while it is shaped by it. Placed in the tideline the lower section of the tower will be swallowed by the tide, making entry impossible. Over time the plexiglass panels will scratch, sampling grains of sand carried in on the tide until it is eventually opaque. The overall form of the tower, dictated by the two most prominent wind directions and the tide, guides the wind across its perforated facades. As one walks up the stairs one experiences the building sampling the wind, becoming an instrument. The perforations are sized so that as one climbs, the tone changes. At the top of the tower is a small container filled with water. Through it one looks to the horizon, measuring the curvature of the earth against the still flat plane of water, connecting the inhabitant to the larger landscape (Fig. 59: **7**).

photography atelier

camera obscura

transition to camera obscura

entry from - exit to beach

entry from - exit to radar tower

camera obscura cycle

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measuring the curvature of the earth

XI. Conclusion

This thesis was an attempt to connect the things I find unique and beautiful into my ongoing architectural education. My inspiration was primarily the late Jay Dee, a hip-hop producer whom I hold in high regard not only for his compositional prowess but also how he addresses memory in a very simple and very pure way. Using a sample that lasts sometimes a fraction of a second, Jay Dee compressed the past and the present into new and unseen relationships, illuminating new intellectual and emotional environments which the listener inhabits. We as architects should strive to do the same; rather than creating merely "new space" create new inhabitable physical, emotional and intellectual relationships. This thesis investigates how, through the process of sampling, one might achieve this.

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APPENDIX

<u>APPENDIX A:</u> Site Documentation



(Fig. 60) Site on world map.



(Fig. 61) Site on world map



(Fig. 62) Site on world map



(Fig. 63) Site on world map



(Fig. 64) Site on world map



(Fig. 65) Site on world map



(Fig. 66) Site on world map



(Fig. 67) Site. Crosby Radar Tower, Crosby Beach, Liverpool, Uk. (www.multimap.com)



(Fig. 68) Site. Crosby Radar Tower, Crosby Beach, Liverpool, Uk. (www.multimap.com)



(Fig. 69) Site. Crosby Radar Tower, Crosby Beach, Liverpool, Uk. (www.multimap.com)



(Fig. 70) Site. Crosby Radar Tower, Crosby Beach, Liverpool, Uk. (www.multimap.com)



(Fig. 71) Site (beneath tower) on Crosby Beach, Liverpool, UK.



(Fig. 72) Another Place by Antony Gormley. Crosby Beach, Liverpool.

My design project is located on the banks of the River Mersey in Liverpool, UK. The existing structure is a functional but disused radar tower that stands on a manmade extension of the land. The tower is the first (or last) component of the Liverpool dock system, and offers visitors "one of the rarest views in Britain, taking in the Liverpool Bay, Wirral Peninsula and the mountains of North Wales." To the northeast, stands Antony Gormley's "Another Place" 100 bronze cast figures of the artist, placed in the tideline and gazing out to sea. As Crosby is a non-swimming beach, the sculpture draws the majority of visitors to the site. The program for the project will be divided between educational (for the casual tourist/city resident) and research (observation and communication with entering/leaving ships) components and will address the ideas of direct vs. abstracted views of the landscape inherent in both the traditional observation deck and control tower. The project will address the role of the sample in both quantitative and a qualitative observation as well as landmark and threshold in its ties to the city, river and memory.



(Fig. 73) Educational component. Direct understanding of space



(Fig. 74) Control tower component. Abstracted understanding of space



(Fig. 75) Photodiagram - Educational vs. Control Tower.



(Fig. 76) Educational.



(Fig. 77) Control Tower.



(Fig. 78) Qualitative vs Quantitative in "permanent" environment.



(Fig. 79) Qualitative vs. Quantitative in "transient" environment.



(Fig. 80) "Another Place" Antony Gormley Natural manipulation of sample. (Fig. 81) "Another Place" Antony Gormley. Human manipulation of sample.



(Fig. 82) Appropriation and Assimilation. Another Place by Antony Gormley. Crosby Beach, Liverpool.



(Fig. 83) Appropriation vs. Assimilation. Superlambanana by Taro Chiezo. Downtown Liverpool







(Fig. 84 a, b, c) Crosby Beach. Views of existing shoreline, including "Another Place", existing tower and wind farm.



(Fig. 85) Inverse figure/ground on Liverpool map 1839. Initial map by Society for the Diffusion of Useful Knowledge, Diagram by J. Thomas



(Fig. 86) Modern Liverpool skyline from River Mersey. Day



(Fig. 87) Modern Liverpool skyline from River Mersey. Night

<u>APPENDIX B:</u> Program Requirements

(from http://www.ribamerseyobservatory.co.uk)

Concept Requirements

"The Mersey Observatory concept requires the structure to be of sufficient height to maximize the panoramic views offered by this unique location. It is envisaged that the observation deck(s) will be a minimum of 30m above ground level, and no maximum elevation is specified by the client. The design of the observation deck(s) will need to take full account of the extreme weather conditions in this area and should therefore consider both open and closed observation deck(s).

The site is intended to be accessed along a decked road, which could be developed into a raised boardwalk. This would give the impression of a pier and limit the impact of visitors on wildlife and habitats within the coastal reserve. Access would be gained alongside the marine lake from the carpark along the perimeter of the dock estate."

Based on forecast visitor numbers derived by Locum Consulting as part of the Feasibility Study, it is envisaged there will be in excess of 250,000 visitors per year to the Mersey Observatory. For the purposes of this competition it is envisaged the site and facilities should be capable of delivering services for 150,000 generally and up to a maximum of 255,000 visitors to the site per annum.

The new facility should have at least 250m2, ideally 500m2 of ground floor accommodation to house entrance and reception space, interpretation/study area, small café, staff accommodation, toilets and access/entrance space to the main tower including

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a lift lobby.

The design should make adequate provision for service and emergency vehicle access.

The design should ensure that at least 10% of predicted energy use is met by the use of renewables."

DDA compliance, sustainability and environmental impact are essential considerations.

Concept Desirables

The following elements are also desirable components of the scheme:

- Consideration of links with wider transport and movement circuits
- Potential development of a Pier/ferry docking platform
- Possible integration of tidal energy into a pier structure
- Creative lighting"

<u>Ground Floor Accommodation:</u> 250m² – 500m² (2700ft² – 5400ft²)

Entrance – 20m² (215ft²)

Reception space (lobby) $-100m^2$ (1076ft²)

Interpretation/study area – 150m² (1614ft²)

Café – 15m^2 (160ft^2)

Staff accommodation $-40m^{2}$ (430ft²)

Toilets $-25m^2$ (270ft²)

Circulation (including lobby elevator) $-20 \text{ m}^2 (215 \text{ ft}^2)$

Net: 370m² (3980ft²) **Gross:** 463m² (4895ft²)

Additional:

Staff Residential – 150m² (1614ft²)

Exhibition Hall – 100m² (1076ft²)

Visitor Observation Deck – 100m² (1076ft²)

Control Tower Observation Deck – 50m² (540ft²)

Net: 400m² (4305ft²) **Gross:** 500 (5381ft²)

Total:

Net: 770m² (8285ft²) **Gross:** 963m² (10276ft²)

<u>APPENDIX C:</u> International Building Codes

The project will be a combination of two different occupancies. The first, for visitors falls under both business (B) and educational (E) occupancies and will conform to the international building codes for educational occupancy. The research/control tower component falls under business (B) occupancy. The two sections of the building will be completely disconnected (in terms of occupancy), except for common circulation, which will comply to the more strict educational occupancy. Based on the required height of the project as specified by the client, under the International Building Codes a height of 100+ ft with educational occupancy must meet either a 2 or 3 hour fire rating.

2-Hour Noncombustible Construction

2-Hour noncombustible construction requires a fire-resistance rating of 2 hours for floor construction, columns, and bearing walls.

Structural Steel columns, beams, joists, and decking must be protected to these values with applied fireproofing materials or an appropriately fire-resistive ceiling of plaster, gypsum board, or fibrous panels

Reinforced Concrete columns must be at least 254mm (10in) in dimension, and loadbearing walls must be at least 137mm (5in) thick. Floor slabs must be at least 127mm (5in) thick. Concrete one-way and two-way joist systems (ribbed slabs and waffle slabs) with slabs thinker than 127mm (5in) between joists require protection with applied fireproofing materials or an appropriately fireresistive ceiling of plaster, gypsum board, or fibrous panels

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Post tensioned Concrete floor slabs must be at least 127mm (5in) thick.

Precast Concrete columns must be at least 203mm (8in) in dimension, and beams at least 178mm (7 in) wide. Loadbearing wall panels must be at least 127mm (5in) thick. Solid slabs may not be less than 127mm (5in) thick. Hollow core slabs must be at least 203mm (8in) deep and may be used without a topping. Double and single tees require applied fireproofing materials or an appropriately fire-resistive ceiling of plaster, gypsum board, or fibrous panels, unless a concrete topping 83mm (3.25 in thick is poured.

Brick Masonry loadbearing walls must be at least 152mm (6in) thick. Vaults and domes must be at least 203mm (8in) deep with a rise not less than one-twelfth the span.

Concrete Masonry loadbearing walls must be at least 152mm (6in) thick. Depending on the composition and design of the masonry unit, applied plaster or stucco facings may also be required.

<u>Height / Floor Area</u> (Type I-B – 2-hour fire rating)

- 180' / unlimited area (sprinklered)
- 75' / unlimited area (unsprinklered)

Egress (Educational)

Maximum Travel Distance from Most Remote Point to Nearest Exit Enclosure

Unsprinklered – 61m (200ft)

Sprinklered – 76m (250ft)

Maximum Travel Distance to Two Independent Egress Paths – 23m (75ft)

Largest Room That May Have Only One Door - 50 occupants

Maximum Length of Dead-End Corridor – 6m (20ft)

Minimum Clear Corridor Width – 50+ occupants - 1118mm (44in) 50-100 occupants 914mm (36 in)

Minimum Net Clear Egress Door Width – 813mm (32in)

Minimum Stair Width – 50+ occupants 1118mm (44in) 50- occupants 914mm (36in)

Egress (Business)

Maximum Travel Distance from Most Remote Point to Nearest Exit Enclosure

Unsprinklered – 61m (200ft)

Sprinklered – 91m (300ft)

Maximum Travel Distance to Two Independent Egress Paths – 23m (75ft)

Largest Room That May Have Only One Door – 50 occupants

Maximum Length of Dead-End Corridor – 6m (20ft)

Minimum Clear Corridor Width – 50+ occupants - 1118mm (44in) 50-100 occupants 914mm (36 in)

Minimum Net Clear Egress Door Width – 813mm (32in)

Minimum Stair Width – 50+ occupants 1118mm (44in) 50- occupants 914mm (36in)

Stair Requirements (Educational and Business)

Maximum Riser Height (R) – 178mm (7in)

Minimum Riser Height (R) – 102mm (4in)

Minimum Tread Depth (T) - 279mm (11in)

Maximum Rise Between Landings – 3658mm (12in)

Minimum Number of Risers per flight – no requirement

Ramp Requirements (Educational and Business)

Maximum Ramp Slope for Required Exits – 1:12

Minimum Ramp Width – 914mm (36")

Vertical Distribution of Services For Large Buildings

Business – Water Closets (1:50), Lavatories (1:80), Drinking Fountains (1:100)

Educational – Water Closets (1: 50), Lavatories (1:50), Drinking Fountains (1: 100)

APPENDIX D: miscellaneous

<u>Mending Wall</u> (1914) by Robert Frost

Something there is that doesn't love a wall, That sends the frozen-ground-swell under it, And spills the upper boulders in the sun, And makes gaps even two can pass abreast. The work of hunters is another thing: I have come after them and made repair Where they have left not one stone on a stone, But they would have the rabbit out of hiding, To please the yelping dogs. The gaps I mean, No one has seen them made or heard them made, But at spring mending-time we find them there. I let my neighbor know beyond the hill; And on a day we meet to walk the line And set the wall between us once again. We keep the wall between us as we go. To each the boulders that have fallen to each. And some are loaves and some so nearly balls We have to use a spell to make them balance: 'Stay where you are until our backs are turned!' We wear our fingers rough with handling them. Oh, just another kind of out-door game, One on a side. It comes to little more: There where it is we do not need the wall: He is all pine and I am apple orchard. My apple trees will never get across And eat the cones under his pines, I tell him. He only says, 'Good fences make good neighbors'. Spring is the mischief in me, and I wonder If I could put a notion in his head: 'Why do they make good neighbors? Isn't it Where there are cows? But here there are no cows. Before I built a wall I'd ask to know What I was walling in or walling out, And to whom I was like to give offence. Something there is that doesn't love a wall, That wants it down.' I could say 'Elves' to him, But it's not elves exactly, and I'd rather He said it for himself. I see him there

Bringing a stone grasped firmly by the top In each hand, like an old-stone savage armed. He moves in darkness as it seems to me Not of woods only and the shade of trees. He will not go behind his father's saying, And he likes having thought of it so well He says again, "Good fences make good neighbors."

<u>VITA</u>

Jacob Stafford Thomas was born in Pittsburg, Pennsylvania on October 31, 1981. He grew up in Huntsville, Alabama. He graduated from Huntsville High School in 2000. From there, he went to the University of the South, Sewanee where he received his Bachelors in English in 2004. He then went to study architecture at the University of Tennessee where he received his Masters of Architecture in 2009. After graduating he will be working toward getting his license.